



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,696	03/28/2005	Jacques Brochu	06670/0202695-US0	2024
7278	7590	02/08/2006	EXAMINER AMRANY, ADI	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			ART UNIT 2836	
PAPER NUMBER				

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/529,696

Applicant(s)

BROCHU ET AL.

Examiner

Adi Amrany

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/28/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: each foreign patent; and each publication or that portion which caused it to be listed. Reference BB is in German and does not contain an English language abstract. A search report was not attached to applicants' IDS, as stated on page 3. This reference has not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

Specification

2. The incorporations of essential material in the specification by reference to publications are improper. See page 6, lines 10-15, page 8, lines 8-14, and page 10, lines 16-28. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously

Art Unit: 2836

incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

3. The specification is objected to because applicants' use of the term circuit breaker (page 4, line 9, and throughout) is inconsistent with its ordinary meaning. A circuit breaker is an electronic component that trips or is automatically activated to stop the flow of electricity in a circuit if there is too much current to operate safely. The "circuit breaker" as provided in applicants' disclosure is maneuvered (page 4, lines 9-10; page 11, line 31, etc.), closed (page 12, lines 2-3), opened (page 12, line 21), manipulated (page 17, line 18), and generally treated as an active element (page 12, lines 1-2). The circuit breakers in applicants' disclosure are better defined as electric switches.

Claim Objections

4. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "circuit breaker" in claims 4-6 and 13 is used by the claim to mean "a device that can be manipulated into an open or closed position to redirect current flow in a circuit", while the accepted meaning is "a device that can automatically stop the flow of electricity in a circuit if there is too much current to operate safely." The term is

Art Unit: 2836

indefinite because the specification does not clearly redefine the term. A circuit breaker is a passive electrical component, while it is used as an active component within the application.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 7-8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Pelletier (US 5,907,239).

With respect to claim 1, Pelletier discloses a method of de-icing energized electric lines by means of an apparatus capable for producing an angular offset adjustable between its terminals (figure 1, item 6; column 6, lines 13-22), comprising:

selecting segments of electrical lines to be de-iced (figure 1, items 4 and 6; column 6, lines 23-27);

connecting the segments so as to form a loop (figure 1, connection of items 4, 46, 6, and 44; column 9, lines 22-26);

connecting the apparatus in series with the segments of the loop to be de-iced (figure 1, item 6 in series with transmission line between 48 and 50);

activating the apparatus;

and adjusting the angular offset of the apparatus to impose an increase in current flowing in at least one of the segments of the loop, thus causing the de-icing of said at least one of the segments of the loop (column 8, lines 43-45; column 16, lines 5-13).

The apparatus and method disclosed in Pelletier use a phase-shifting transformer in series with reactive elements to reduce the angular offset between terminals of a transmission line in order to enhance the capacity of a network (column 9, line 56 to column 120, line 14). Pelletier also discloses that it is possible to use the apparatus to increase the power flow to the system (column 11, line 48 to column 12, line 11). The Pelletier apparatus and method can increase power flow by increasing the angular offset between the terminals, creating heat, and would, thereby, necessarily cause de-icing of the transmission lines. Further, it is inherent that the apparatus is activated when it is adjusted in order to alter the angular offset.

With respect to claim 2, Pelletier discloses the method of de-icing according to claim 1, and further discloses where the apparatus comprises a phase shifting transformer (figure 1, item 10; column 8, lines 43-47) provided with a tap changer (figure 10, item 70; column 11, lines 1-13), the angular offset being adjusted by acting on the tap charger.

With respect to claim 3, Pelletier discloses the method of de-icing according to claim 2, and further discloses the apparatus comprises a capacitor (figure 8B, item 12; column 10, lines 48-50) in parallel with the phase shifting transformer.

With respect to claim 4, Pelletier discloses the method of de-icing according to claim 1, and further discloses the apparatus comprises a circuit breaker and is activated by proceeding successively by the following operations:

measuring a phase displacement at the terminals of the apparatus
(column 6, lines 37-43);

adjusting the internal angle of the apparatus to a same value of the phase displacement measured (column 6, lines 43-47);

and manipulating the circuit breaker of the apparatus into a closed position
(column 7, lines 31-35).

Pelletier discloses that the transformer branch is switched into service, which is evidence of a switching mechanism. The switch of the Pelletier apparatus and method functions as applicants' described circuit breaker.

The internal angle of the apparatus and method disclosed in Pelletier can be varied over an angle range (column 12, lines 17-18), and it would be obvious to a person skilled in the art that one of the settings of the angle of the apparatus would be the same value of the phase displacement. And when the angles are the same, the circuit breaker mechanism will be switched.

With respect to claim 7, Pelletier discloses the method of de-icing according to claim 1, and further, the electric lines disclosed in Pelletier are energy transport lines, as they are used to carry and distribute power over AC networks.

With respect to claim 8, Pelletier discloses the method of de-icing according to claim 1, and further, the electric lines disclosed in Pelletier are energy distribution line, as they are used to carry and distribute power over AC networks.

With respect to claim 10, Pelletier discloses a method for de-icing energized electrical lines by means of an apparatus capable of producing a fixed angular offset between its terminals (figure 1, item 6; column 6, lines 13-22), comprising:

- selecting segments of electrical lines to be de-iced (figure 1, items 4 and 6; column 6, lines 23-27);

- connecting the segments so as to form a loop (figure 1, connection of items 4, 46, 6, and 44; column 9, lines 22-26);

- connecting the apparatus in series with the segments of the loop to be de-iced (figure 1, item 6 in series with transmission line between 48 and 50);;

- activating the apparatus;

- and connecting the apparatus in circuit with the loop, the apparatus and the line segments being previously chosen (column 12, lines 14-30) so that the angular offset imposes an increase in current flowing in at least one of the segments of the loop, thus causing the de-icing of said at least one of the segments of the loop.

Pelletier discloses that the phase shift transformer can be set to a fixed angular offset (lines 16-19). The apparatus is automatically activated when the apparatus is connected to the loop, as discussed above.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-6 and 9 are rejected under 35 U.S.C. 103(a) as being obvious over Pelletier, in view of Schauder (US 6,433,520).

With respect to claim 5, Pelletier discloses the method of de-icing according to claim 4, but does not expressly disclose the operations further comprise: manipulating a line circuit breaker on one of the segments of the loop into an open position for connecting charging current in the other segment of the loop.

Schauder discloses manipulating switch devices within the line segments for determining which line segment to supply with charging current (figure 6, item 27; column 4, line 60 to column 5, line 56; column 6, lines 56-67).

Pelletier and Schauder are analogous because they are from the same field of endeavor, namely methods for controlling power flow over AC transmission lines.

At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to combine the line switch device disclosed in Schauder with the method of power flow control disclosed in Pelletier.

The motivation for doing so would have been to allow for altering the direction of power flow to increase the level of power along the segment to be de-iced.

Art Unit: 2836

With respect to claim 6, Pelletier discloses the internal angle of the apparatus and method disclosed in Pelletier can be varied over an angle range (column 12, lines 17-18).

Pelletier does not expressly disclose the apparatus is then activated by:

adjusting the internal angle of the apparatus to a value of zero;

manipulating a circuit breaker connected between the segments of the loop in a closed position so as to short-circuit the apparatus;

manipulating a line circuit breaker on one of the segments of the loop into an open position for concentrating a charging current in the other segment of the loop;

manipulating the circuit breaker connected between the segments of the loop in an open position.

Schauder discloses reducing the value of the internal angle to zero (column 5, lines 36-46), manipulating two switch devices (figure 1, items 17 and 27) to connect the de-icing apparatus to a transmission line (column 4, lines 46-59).

At the time of the invention by applicants, it would have been obvious to set the internal angle to a value of zero and to combine the switch devices disclosed in Schauder with the method of power flow control disclosed in Pelletier.

The motivation for doing so would have been to control the dc voltage applied to the transmission line.

With respect to claim 9, Pelletier discloses the method of de-icing according to claim 8, but does not expressly disclose the apparatus is mobile and the distribution

Art Unit: 2836

lines are connectable to a sectioning point by means of an interruptor having opposing terminals, the terminals of the apparatus being connected to the terminals of the interruptors, the interruptor being manipulated into an open position during de-icing.

Schauder discloses connecting the de-icing apparatus to the transmission lines through switch devices (figure 1, items 17 and 27; column 4, lines 46-59), as discussed above.

At the time of the invention by applicants, it would have been obvious to a person skilled in the art to combine the method of de-icing disclosed in Pelletier with the switch devices disclosed in Schauder.

The motivation for doing so would have been to create a mobile de-icing apparatus that can be removed from a segment loop and then disconnected entirely from the transmission line when no de-icing is required along that segment.

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being obvious over Pelletier, in view of Stifter (US 4,368,499).

With respect to claim 11, Pelletier discloses the method for de-icing according to claim 10, but does not expressly disclose where the apparatus is connected with the segments of the loop by an interrupting element, the apparatus being connected in circuit with the loop by manipulating the interrupting elements.

Stifter discloses an interrupting element (figure 1, item 13; column 2, lines 39-49) that can be manipulated for connecting and disconnecting a control circuit into series between a power source and a load.

Pelletier and Stifter are analogous because they are from the same field of endeavor, namely controlling power flow through an electric transmission line.

At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to combine the method of power flow disclosed in Pelletier with the interrupting element disclosed in Stifter.

The motivation for doing so would have been to allow the power flow control circuit to be removed from the power flow path of the transmission line.

With respect to claim 12, Pelletier and Stifter disclose the method of de-icing according to claim 11, as discussed above, and Stifter further discloses that the interrupting element comprises an interruptor (figure 1, item 13; column 2, lines 41-44).

With respect to claim 13, Pelletier and Stifter disclose the method of de-icing according to claim 11, as discussed above, and Stifter further discloses that the interrupting element comprises a switch (figure 2, item S1; column 4, lines 1-20). The switch of Stifter functions as applicants' described circuit breaker.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on weekdays, from 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2836

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Phuong T. Vu', with a stylized, flowing script.

PHUONG T. VU
PRIMARY EXAMINER